55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

the large end against a stone fix'd in the ground for that purpose, and the other being push'd against the door serves as a strong bar, which makes it as necessary to rap here at the door as at a gate in England before you can enter an inclosure. In a great many of them there is a smaller inclosure within, this also often with a door, where the house of the principal person is immediately plac'd, and near it or very often in the outer one houses of an inferior sort for servants and dependents. There are sometimes several little places again within this that have fences and houses, but communicate freely with each other, and in most there is commonly a pretty spot of short grass, though of no regular figure, before them with sweet smelling shrubs call'd Ma'eele[1] and Hooe[2] planted up and down and some other trees that produce beautifull flowers. The outer inclosure has commonly such things as they often want planted in them, as Cocoa nut trees or some plantanes and bread fruit, but no considerable plantations of Plantanes or Yams.

Beyond this a mile or two we generally found the Plantations more extensive but open, and still farther on a great quantity of uncultivated land coverd with grass as high as the Knee. Our guides said if we advanc'd that way we should still find a waste uncultivated country, or as they call it Vâó,[3] but they probably did it only to save themselves a little fatigue, for some miles beyond this the land seem'd to rise a little higher and had a great many Cocoa trees, both signs of its being cultivated. It could also be observ'd that even in this place the soil was good, and it is probable many of the spots only lay fallow, for we saw two or three large plantane fields that had lately been broke in from such ground. It is remarkable that when on the highest part, which is at least a hundred feet above the level of the sea, we often found the same coral rock which is found at the shore, projecting above the surface in the paths; and in many places where there were large breaches with a small quantity of stinking water at the bottom, it was always in the solid coral shatterd or seperated as it were by violence.

At one place we fell in with a house where they were manufacturing their cloth, which though extensive in itself is a very simple operation. They take the slender stalks (or trunks) of the papper mulberry plant, which they cultivate for that purpose and seldom grows more than six or seven feet in height or four fingers in thickness, from which they strip the bark and scrape off the outer rind with

[1] Maile, *Alyxia stellata*, a shrub with fragrant long slender stems, abundant small leaves and dark red berries, much used for wreaths.
[2] Hoi, *Dioscorea bulbifera*, one of the yams, with small flowers in spike-like clusters.
[3] *sae*, land in its natural uncultivated state. Anderson is very accurate.

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a muscle shell. It is then roll'd up to take of the convexity which it had round the plant, tied and macerated in water for some time (they say a night), after which it is laid across the trunk of a small tree squar'd, and beaten with a square wooden instrument about a foot long, full of coarse grooves on all sides but sometimes with one plain. According to the size of the bark a piece is soon produc'd but the operation is often repeated by another hand, or it is folded several times and beat longer by the same, which seems rather to close than divide its texture. When it is sufficiently done it is spread out to dry, the pieces being from four or five feet to six or more in length and half as broad. They are then given to another person who joins the pieces by smearing part of them over with the viscous juice of a Berry call'd 'Tooo,[a] which serves as a glue, till they become of a considerable size and are then laid over a large piece of wood with a kind of stamp made of a fibrous substance pretty closely interwoven under it. They then take a bit of cloth and dip it in a juice which stands close by in a cocoa nut shell, express'd from the bark of a tree with the outer rind scrap'd off call'd Kokka,[1] and rub it briskly upon the cloth, which at once leaves a dull brown colour and a gloss for glazing & dryness upon its surface, the stamp at the same time making a slight impression that answers no other purpose which I could see than perhaps to make the several pieces that are glued together stick a little more firmly. In this manner they proceed joining and staining by degrees till they produce a piece of such length and breadth as they want, generally leaving a border of a foot broad at the sides and longer at the ends unstaind. Through the whole, if any part of the original pieces are too thin or have holes, which is often the case, they glue spare bits upon them till it is of an equal thickness; and when they want to produce a black colour they mix the soot procur'd from an oily nut calld Dooe'dooe[2] with the juice of the Kokka in different quantitys as they want the tinge. They say that the black sort, which is commonly most glaz'd, makes a cold dress but the other a warm, and to obtain strength in both they are always carefull to join the small pieces length-ways which makes it impossible to tear the cloth in any direction but one.

As we wanted much to know if there was any good water about the bay our guides said they would conduct us to such a place and carried us to two different spots from whence the tide had fallen some way,

[a] This is the Cordia. [The Tahitian Tou is *Cordia subcordata*, but the Tongan tree of which the berries were used for this purpose was *Melochia aristata* or *M. odorata*. Cf. Cook, p. 172, n. 1 above.]

[1] Koka, *Bischofia javanica*.

[2] Tuitui, *Aleurites moluccana*.

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cylindrical bits of ivory[1] about three inches long, introduc'd at one hole and brought out at the other, or bits of reed of the same size fill'd with a yellow pigment which seems to be a fine powder of turmeric, with which the women sometimes rub themselves all over in the same manner that our ladys use their dry rouge upon the cheeks. Nothing seems to give them greater pleasure than personal cleanliness, to procure which they frequently bathe in the ponds which seem to serve no other purpose. They prefer these to the sea, though most of them stink intolerably, because the water is a little fresher and they are so sensible that salt water hurts their skin that when necessity obliges them to bathe in the sea they have commonly some Cocoa nut shells of fresher water pourd over them to wash it off. They are immoderately fond of Cocoa nut oil for the same reason, a great quantity of which they not only pour upon their head and shoulders but rub the body from head to foot briskly with a smaller quantity, and (unless to those who have seen this practice) it is not easy to conceive the different appearance and advantage they seem to receive from undergoing these different trimmings. This oil however is an article not to be procur'd by every one, and the inferior sort of people doubtless appear less smooth for want of that and more frequent shifting of their cloth, as it is no uncommon thing to see them wash the last though its texture would at first make us think that could not be done.

Their domestic life is of that middle kind which I believe the most sensible part of mankind always desire, which is to say it is neither so laborious as to be disagreeable nor so vacant as to suffer them to degenerate into indolence. Nature has done so much for their country that the first can hardly occur and their disposition seems to be a pretty good bar to the last. This happy combination of circumstances is such that their necessary labour seems to yield in its turn to their recreations, in such a manner that the last are never interrupted by the thoughts of being oblig'd to recur to the first till satiety makes them wish for such a transition. The employment of the women is of the easy kind and for the most part such as may be done in the house. The manufacturing their cloth as already describ'd is wholly consign'd to their care, and next to that fabricating their matts seems to be of the greatest consequence. Of these they have seven or eight different sorts for the purposes of wearing or sleeping on and many are merely ornamental. The last are chiefly made from the tough membranous part of the stock of the plantane tree, those they wear from the Pandanus, cultivated for that purpose and never

[1] Whale tooth.

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sufferd to shoot into a trunk, and the coarser sort which they sleep upon from a plant call'd E'varra.[1] There are many other articles of less note that employ their spare time, as combs of which they make vast numbers, little baskets made of the same substance as the matts and others of the fibrous Cocoa nut husk, either plain or interwoven with small beads, but all made with such neatness and taste in the disposition of the different varietys, which are very numerous, that a stranger cannot help looking with pleasure at their assiduity and dexterity. Every person knows the beautifull character that Solomon has drawn of an industrious women and the happy consequences that attend it, and we may almost venture to say that Solomon in that character has included a true picture of all the women of Tonga. The province alloted to the men is as might be expected far more laborious and extensive than that of the women. Agriculture, Architecture, Boat building, Fishing and other things that relate to Navigation are the objects of their care. I would not wish to refer to any thing prior to the date of this voyage to illustrate any circumstance by, when I can avoid it, as it would be interweaving subjects that ought to be seperate unless every person knew them as well as myself, but I cannot help relating here an observation which may have been made before, though not to my knowledge, which is that in all the places I have visited in these seas the degree of civilization that has taken place amongst them may be known by the attention they pay to the fair sex. Those in a very barbarous state treat their women with such a degree of rudeness or rather brutality and at the same time indifference that they seem to think them not so much intended as a companion, or to be upon the same scale with themselves, as a set of beings every way inferior to them and only fit for such mean offices as they would not stoop to. On the contrary as civilization has advanc'd we find them not only eas'd of those laborious employments which their natural delicacy of frame requires, but treated with that respect to which they are often more justly entitled than their lordly masters, and have even a great sway in the management of affairs. Cultivated roots and fruits being their principal support requires their constant attention to Agriculture, which they pursue very diligently and seem to have brought to as much perfection almost as circumstances will admitt of. The land about Mooa though so well planted is scarcely equal to that part of the island where Cap[t] Cook anchor'd in 1773, and from Mooa to the NE point which is all the places we have seen it is tolerable, from whence one might suppose, if the unseen parts are in the same proportion, that two thirds

[1] *fala* was the word for sleeping-mat, not for a plant. The pandanus was called *fa*.

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241 of the island is in the highest state of cultivation. The large extent of
[311] the Plantane fields was taken notice of already, and the same may be
said of the Yams, these two together being at least as ten to one to all
[412] the other articles. In planting both these it does not appear they turn
over the ground as we do, but in a field that has lain waste and is
coverd with grass they dig small holes for their reception, and after-
wards root up the grass with a flat narrow wooden instrument call'd
Hōōō,[1] which in this hot country is quickly depriv'd of its vegetating
power and soon rotting becomes a good manure. They are planted
in rows by a line such as our Gardiners use, in such a manner that
which ever way you look the rows present themselves regular and
compleat. The Plantanes are usually three paces asunder, the Yams
two and the Jeejees one. The first are shoots from the root of the old
tree, which when weak they often defend with a sort of basketing laid
over them, and the Yam tendrils at first shooting up are frequently
245 supported on short bits of sticks. The Cocoa nuts and bread fruit trees
241 are scatterd about without any order and seem to give them no
trouble after they have attaind a certain heighth. The same may be
said of another large tree which produces great numbers of a large
roundish compress'd nut call'd 'Eēēfee,[2] and a smaller tree that bears
a rounded oval nut two inches long with two or three triangular
kernels, tough and insipid, call'd Mabba,[3] most frequently planted
near their houses. The Kappe is commonly regular[l]y planted and
in pretty large spots, but the Ma'whaha is interspers'd amongst other
things, as the Jeejee or Yams, the last of which I have frequently seen
in the interspaces of the Plantane trees at their common distance.
241 Sugar cane is commonly in small spots crowded closely together, and
248 the Mulberry of which the cloth is made, though without order, has
[249] sufficient room allowd it and is kept very clean. The only other plant
they cultivate for their manufactures is the Pandanus which is
commonly planted in a row close together at the sides of the other
fields, and they consider it is a thing so distinct in this state that they
have a different name for it,[4] a proof that they are very sensible of the
great changes brought about by cultivation. Whether the same re-
mark may be applied to the Mulberry I am not certain, for it seems
doutfull if ever they knew it in any other than its present cultivated
one, as it never flowers; at least there was none of the old trees from
whence they could propagate it seen, wheras the Pandanus is one of
417 the most common in the country. Their fences should be considerd
351

[1] *hue.* [2] Ifi, *Inocarpus edulis.* [3] Mapa, *Diospyros lateriflora* or *D. ellipticifolia.*
[4] The Tongan vocabulary at the end of the third volume of the printed *Voyage* gives one of the meanings of 'Keeai' [*kie*] as 'the cultivated Pandanus'.

137 Teve (Amorphophallus campanulatus). This traditional
262 Pacific aroid, although supposedly eaten as a starch in the past, is rarely if ever eaten and is found only occasionally in a wild state on bush allotments.

241 Other miscellaneous food plants. There are a number of other, introduced food plants which are grown on an infrequent basis, primarily on town allotments, such as roselle - lasipeli (Hibiscus sabdariffa).

Important Non-food Plants

There are a considerable number of important non-food plants (not including large trees), which are also commonly found on bush and town allotments throughout Tongatapu; these include:

248 Paper mulberry - hiapo (Broussonetia papyrifera). Of
287 East Asiatic origin and ancient introduction into the Pacific (Yuncker, 1959: 97), paper mulberry is traditionally one of Tonga's most widely grown, non-food plants, its fibrous inner bark being used to make tapa cloth or ngatu.
248 It is grown on a large number of bush allotments throughout Tongatapu, either alone or intercropped with other subsistence crops. It takes about 12 to 18 months to mature, can be cut continuously for a number of years and is often found in bush fallow associations where it remains useful for the production of tapa cloth.

247 Screwpine (Pandanus spp.). Although commonly found growing naturally throughout Tongatapu, there are a number

000 Tongan men and women. Wild or cultivated Pandanus leaves,
291 coconut fronds, and stems of wild plants such as Hibiscus
824 tiliaceus or Eleocharis dulcis are sources of fiber from
287 which the various types of ta'ovala are made. The tapa
248 cloth or ngatu is prepared from the inner bark of the
paper mulberry plant (Broussonetia papyrifera), which is
291 planted as a crop in the bush gardens. Belts or twine used
824 to hold the garments in place are often made out of either
coconut or Hibiscus fiber.

342 In the case of housing or shelter, the role of the
241 agricultural system is again of considerable importance as
342 a source of materials. Table 19 is an enumeration of
128 housetypes found as part of the survey of 192 allotments on
342 Tongatapu. Although it is often difficult to distinguish a
"small wooden" house from a "large wooden" house, there is
no doubt that almost half of the major dwelling units are
342 of the traditional thatched variety (fale Tonga). A fale is
824 constructed with plaited coconut fronds for walls and roof-
ing; coconut and other local timber for poles, beams
and framework; and coconut fiber and the inner bark of
Hibiscus tiliaceus for lashing and tying the roofing down.
In some cases, varieties of bamboo (Bambusa or Miscanthus)
are used for walls. The leaves of a type of sugarcane, au,
are used in the construction of a superior and long-lasting
thatched roof. Even wooden houses are often constructed
partially or entirely from local timber.

241 Table 34. Frequency of occurrence of specified non-food plants on 101 bush allotments.
247
248
249

Plant	Number of Allotments
Pandanus	76
Paper Mulberry	38
Bamboo	11
Heliconia	9
Cycad	7
Job's tears	6
Hedychium	6
Miscanthus	5
Polynesian Arrowroot	4
Alyxia	4
Cotton	3
Tobacco	2
Tumeric	2
Evodia	2

241 Paper mulberry or hiapo (Broussonetia papyrifera) is
248 second to Pandanus in frequency but occupies more area. It was present on 38 sample allotments and on half of these was the dominant crop on plots averaging about 0.40 acres (.16 hectares). On the other allotments it was interplanted amongst other crops or existed as a volunteer in bush fallow. Such was the case on an allotment near Lapaha,

241 where an extensive planting of paper mulberry had been
248 completely overgrown by a dense stand of Leucaena leucocephala, while still retaining its value for use in the preparation of tapa cloth. Paper mulberry is traditionally an integral crop in the bush fallow cropping sequence.

241 Bamboo (Bambusa vulgaris) has two important varieties,
249 pitu, the taller, stronger variety and kofe, the smaller variety. Four allotments had discrete stands (three of kofe and one of pitu); on the other 6, bamboo was generally amongst secondary vegetation. It is valued for general construction or handicraft work.

Sword grass or kaho (Miscanthus floridulus) was present on 1 allotment as a discrete stand and on 5 in scattered concentrations. Like pitu and kofe, it is valued for general construction and for handicrafts.

A bird-of-paradise-like plant, known locally as loufao or loufusi faikakai (Heliconia sp.), was found in isolated clonal clusters on 9 sample allotments where it was planted or protected. The leaves are used to wrap pudding (faikakai).

The cycad or longolongo (Cycas circinalis) was found on 7 allotments around dwellings, along paths, around small cemeteries, or amongst secondary vegetation. In most cases, it seems to have been deliberately planted, either as an ornamental or for its leaves which are used as a festive
[262] decoration. The seeds are also eaten, after thorough

241 preparation, in times of food shortage.

249 (262) Job's tears or hana (Coix lachryma-jobi) was found planted on 2 allotments in discrete stands and as a volunteer on 4 others. It is increasingly cultivated for production of seed necklaces and other handicrafts.

Tevunga (Hedychium coronarium), the leaves and roots of which are used to scent coconut oil (lolo Tonga), was found in cultivation around dwellings on 6 allotments. It also occasionally escapes and becomes naturalized.

Polynesian arrowroot or mahoa'a (Tacca leontopetaloides) was found planted alone on a plot of 0.30 acres (0.12 hectares) on 1 allotment. On the 3 other allotments, it was either intercropped with yams or among secondary vegetation. In the past, it seems to have been grown more widely to prepare paste for tapa making and for occasional use as an edible starch.

Maile (Alyxia stellata) leaves are used to make leis, sashes, and decorations for festive occasions. On 3 bush allotments it was found in a wild state; on another, it was cultivated or protected near a temporary dwelling.

241 ● 248 Cotton or vavae Tonga (Gossypium brasiliense) was present on three of the 101 sample allotments. On one, more than 20 plants were planted along the border between two bush allotments. On the other two, individual plants were found near dwellings.

241 249 Tobacco or tapaka (Nicotiana tabacum) was on one allot-

241 fruit (Passiflora spp.)

[247] [248] Of the non-food plants which are cultivated and protected, the most common are a number of species of Pandanus and paper mulberry (Broussonetia papyrifera). There are also numerous other plants which are cultivated or protected because of the value of their fruit, flowers, leaves, roots, bark, and wood for such purposes as the preparation of handicrafts, folk medicines, dyes, scented coconut oil, decorations, and adornment (Appendix E).A

241 245 Although the major staple and commercial crops tend to dominate the cultivated acreage of bush allotments, the most prominent plants are usually coconut palms and a great range of important tree species. The coconut palm, which was present on over 90 percent of the surveyed bush allotments, is by far the most common and most important cash crop on Tongatapu as well as being of considerable subsistence value. On allotments without palms, insecurity of tenure, unsuitable soil, and the threat of frequent fires were often the reason for their absence. 50 percent of the allotments also had newly planted palms.

Other useful trees, primarily important because of their edible fruit, which seem to be present on over half of Tongatapu bush allotments, include: mango (Mangifera indica), citrus trees (Citrus spp.), tava (Pometia pinnata), breadfruit (Artocarpus altilis), Tahitian chestnut (Inocarpus edulis), and guava (Psidium guajava). Other

A[See Category 116, pp. 377-431--Analyst.]

/153 cont./

241 796 178 has long since been forgotten; today the Christianized natives render thanks for their harvests in church.

241 The main crops grown in Tonga today are: yams (Dioscorea alata L.), kapa (Alocasia macrorhiza Schott), sweet potatoes (Ipomea batatas Poir.), manioc (Manihot dulcis Baillon [?]); taro (Colocasia esulenta Schott) and bananas (Musa species). The coconut palm (Cocos nucifera L.) is planted to a great extent. In addition, the following [items] 241 262 are more or less important for the food of the Tongans: breadfruit tree (Artocarpus altilis), mango tree (Mangifera /154/ indica L.), maize (Zea Mays L.), sugarcane (Saccharum officinarum L.), pumpkin (Cucurbita pepo L.), watermelon (Citrullus vulgaris), pineapple (Ananas comosus), peanut (Arachis hypogaea L.), orange (Citrus species), papaya (Carica papaya L.), fekika (Eugenia malaccensis L.), vi (Spondias dulcis Forst.), tava (Pometia pinnata Forst.), ifi (Inocarpus fagiferus), vaine (Passiflora species), apele Tonga (Annona reticulata L.), 'avoka, si (Cordyline terminalis), cabbage, onions, tomatoes. (407)

407. See itemization, p. 234 ff.

241 222 A "gatherer economy" properly speaking does not exist alongside cultivation. The breadfruit tree, the mango tree, tomatoes, oranges, papaya, fekika, vi, tava, ifi, vaine, apele Tonga, 'avoka and si are not only planted, but also grow more or less wild in the luxuriant growth on the plantations, and these the natives, of course, like to [137] harvest. (They also gather the fruits of the kuava tree Psidium Guajava L. which was introduced by Europeans and now grows only wild.)

248 249 They continue to plant the paper mulberry (Broussonetia papyrifera) (for making bast fabric), several pandanus varieties (for making mats), tobacco and kava (Piper methysticum) for preparing the kava drink. (408)

408. See p. 144ff.

287 /217 cont./
292 also no longer used as a sign of taboo. (569)
[784] 569. Still mentioned, for example, in
[178] Martin, loc. cit. II. p. 233.

[513] But at any rate the Tongans use tapa today, as in the past, largely as a sleeping pad (on the mats) and also especially as bed covers. At festive and solemn occasions, especially at a wedding and a burial, [752] bast cloth plays an important role, rooted in tradition. For dances the natives still like to wear tapa clothing; and finally, as in old times, strips of white bast cloth are used as bandages for wounds.
287 Apparently recent is the widespread use of tapa as a curtain inside
353 the dwelling where it partitions off parts of rooms, replacing the
178 movable interior walls (standing mats) formerly used for this purpose.

Today, in Tonga, tapa is made in the following way:

248 The paper mulberry tree (Broussonetia papyrifera) is planted specifically for making bast cloth. Men (sometimes also women) plant saplings on land that has been cleared of weeds (also in an old harvested yam field). While it is growing, the women remove the weeds that shoot up and break off the sprouting twigs from the saplings, so that the latter will grow quite tall. When the little paper mulberry trees (hiapo) have become tall enough, that is, after one or two years, the women (sometimes also the men) cut the small trunks with a machete or an axe.

287 They take the small trunks to the village and keep them in the house for three to six days so that the bark loses its stickiness. Then, with their teeth, the women notch the layer of bark at the lower end of the little tree about five centimeters lengthwise, and, with their hands, vigorously pull off the entire layer around the trunk in a single strip. On the inner side of this layer of bark is the bast needed for tapa-making. This they remove from the bark by separating it from the lower end with a machete (or a kitchen knife) and pulling